

CURRICULUM FOR BACHELOR OF ENGINEERING (BIOENGINEERING)
WITH CN YANG SCHOLARS PROGRAMME
(FIRST YEAR ADMISSION)
AY2025 Intake Onwards

SUMMARY OF ACADEMIC UNIT REQUIREMENT								
Year of Study	Major Requirements			Interdisciplinary Collaborative Core			BDE	Total AU
	School Core	CNYSP-Core	MPE	CC	Professional Series	Care, Serve, Learn		
1	6	27	0	2	0	0	0	35
2	27	10	0	8	0	3	0	48
3	21	0	0	0	6	0	2	29
4	9	0	6	0	3	0	8	26
Total	63	37	6	10	9	13	10	138

YEAR 1 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY1001	Cell	CNY-Core	3	CNYSP Courses
CY1101	Molecule	CNY-Core	4	
CY1308	Physics	CNY-Core	3	
CY1500	Introduction to Research	CNY-Core	2	
CY1601	Mathematics I	CNY-Core	4	
CB1102	Introduction to Chemical and Biomedical Engineering	C	1	
BG1141	Fundamental Biology for Bioengineers	C	3	
			20	

YEAR 1 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY1007	Climate Change	CNY-Core	3	CNYSP Courses
CY1602	Mathematics II	CNY-Core	4	
EG1001	Engineers in Society	C	2	
CC0015	Healthy & Wellbeing	CC	2	
			11	

YEAR 1 SPECIAL SEMESTER				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY2003	Research Attachment 3	CNY-Core	4	CNYSP Course
	Overseas Learning Trip			
			4	

YEAR 2 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY0001	Writing Across the Disciplines	CNY-Core	3	CNYSP Courses
BG2119	Anatomy and Physiology	C	3	
BG2131	Biomaterials	C	3	
BG2142	Biological Thermodynamics	C	3	
BG2211	Introduction to Computational Thinking	C	3	
BG2801	Bioengineering Lab 2A	C	1	
CC0006	Sustainability: Society, Economy & Environment	CC	3	
ML0004	Career Design & Workplace Readiness in the V.U.C.A World	CC	2	
	Tech-For-Good (T4G)	CSL	3	
			24	

YEAR 2 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY0002	Ethics	CNY-Core	3	CNYSP Courses
CY2001	Research Attachment 1	CNY-Core	4	CNYSP Course 2 semester long, course registered only in Sem 2 (similar to URECA)
BG2103	Signal Processing in Biosystems	C	3	

BG2104	Electronics for Biomedical Engineering	C	3	
BG2110	Bioelectricity	C	3	
BG2209	Mechanics for Bioengineers	C	3	
BG2802	Bioengineering Lab 2B	C	1	
CB2002	Introduction to Chemical and Biological Safety	C	1	
SP0061	Science & Technology for Humanity	CC	3	
			24	

YEAR 3 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
BG3102	Control in Biosystems	C	3	
BG3104	Biomedical Imaging	C	3	
BG3105	Biomedical Instrumentation	C	3	
BG3112	Biofluid Mechanics and Medical Devices	C	3	
BG3801	Bioengineering Lab 3	C	1	
MLXXX	Professional Preparation	PS	1	
	Broadening and Deepening Elective 1	BDE	2	
			16	

YEAR 3 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
BG4211	CNYSP Overseas Final Year Project	C	8	CNYSP Course
			8	

YEAR 3 SPECIAL SEMESTER				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
BG3910	Professional Attachment	PS	5	
			5	

YEAR 4 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
BG4104	Machine Learning and Optimization for Bioengineers	C	3	
BG4122	Medical Device Design	C	3	
	BIE PE 1	MPE	3	
	Broadening and Deepening Elective 2	BDE	3	
			12	

YEAR 4 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
BG4122	Medical Device Design	C	3	
CB0494	Introduction to Data Science and Artificial Intelligence	PS	3	
	BIE PE 2	MPE	3	
	Broadening and Deepening Elective 3	BDE	2	
	Broadening and Deepening Elective 4	BDE	3	
			14	
Total AU for Graduation :			138	